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# ASSESSMENT OF NUTRITIONAL STATUS OF UNDER FIVE CHILDREN IN URBAN FIELD PRACTICE AREA

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## ABSTRACT

**Introduction:** Children under the age of 5 years constitute a priority group because of their large numbers. In India they comprise about 13% of the total population.They are also regarded as vulnerable or high risk group because of the problems arising out during their growth, development & survival. 50% of the deaths are occurring among children during the first 5 years of life in developing countries including India. Malnutrition is regarded as the most widespread condition affecting the health status of under five children. Approximately 47% of the India's under five children are underweight. one in three adult women in India is underweight & therefore at risk of developing babies with low birth weight .The under five children suffer from a host variety of diseases like diarrhea , respiratory infections, measles, pertusis, polio, tuberculosis & diphtheria due to malnutrition.

**Objectives:** 1) to assess the nutritional status of under five children in UHTC area.

2) To relate the nutritional status by socioeconomic variables.

**Materials and methods: Study area**: The present study will be conducted in the rural field practice area of UHTC **Type of study:** Cross sectional study. **Study period:** 3 months

**Sample size:** 500 children residing in UHTC area

**Keywords**: Malnutrition UHTC Under five Children

## INTRODUCTION

Malnutrition in India can be termed as a burning social problem due to the impact of socio cultural influence on nutrition. Malnutrition is more due to lack of knowledge and awareness about proper nutrition at a particular stage of growth and development. The state of malnutrition among children in India Nutrition is essential for human development and the focal point of health and well being. It is accepted that the lack of proper nutrition leads to irreversible effects, endangering survival and development. The reasons for malnutrition are myriad and include poverty, lack of nutritious food, inadequate food, improper infant and child feeding, among others. Malnutrition is a complex phenomenon and it is both the cause and effect of poverty and ill-health, and follows a cyclical, inter-generationalpattern.[1] Due to such socio cultural environment developing country like India is unable to tackle the issues related to malnutrition. This condition of under-nutrition, therefore, reduces work capacity and productivity among adults and enhances mortality and morbidity amongst children[2]. There is need find ways to fight against malnutrition of children as they are the future of Nation Pre-school children are one of the most nutritionally vulnerable segments of the population. Nutrition during the first five years has an impact not only on growth and morbidity during childhood, but also acts as a determinant of nutritional status in adolescent and adult life[3]. Malnutrition, the issue itself is vicious in nature and needs utter attention

It is rather obvious that the issue of poor nutrition causing other health problems in the country, including high infant mortality rate and malnutrition is extremely pressing. In fact, the lack of progress over the past decade and the current high levels of malnutrition have led to India being recognized as having, perhaps, the worst malnutrition problem in the world[4]

In India children under the age of 5 years constitute a priority group because of their large numbers, about 13% of the total population. Malnutrition is regarded as the most widespread condition affecting the health status of under 5 children. Approximately 47% of the India's under 5 children are underweight. In the light of the above considerations, the present study is an endeavor to find out the health status of the under five children in the field practice area of Urban Health Training Center Kalalgalli.

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## OBJECTIVES

- To assess the nutritional status of under five children in UHTC area.
- To study the socioeconomic determinants of malnutrition.

## MATERIALS AND METHODS

**Study area**: Urban Field Practice Area Kalalgalli.

**Type of study**: Cross Sectional study.

**Study period**: 3 months ( Oct 2009 to Dec 2009)

**Sample size**: Urban Health Training Centre Kalalgalli caters for a population of approx 6100. The enumerated list of under five children is 793 (2008 ). Considering the prevalence rate of 45% malnutrition among under 5 children in India with allowable error of 10% the calculated sample size was 488, thus the actual sample size of 500 was randomly chosen for this study out of 793 children .The study was carried out by interviewing parents/caretakers of under five children using pretested & predesigned questionnaire by house to house visit.

The assessment of nutritional status was done by anthropometric measurements like Height, Weight, Mid Arm Circumference etc., using standardized instruments & the data was analyzed using appropriate statistical tests.

## RESULTS AND DISCUSSSION

The study has found that a high proportion of higher education status among fathers of children (60%),A significant number of mothers (34%) were illiterates which may be the reason for high prevalence of malnutrition among children. Most of the families belong to lower middle class of socio economic status because most of them were engaged in petty business and many were housewives.

The overall prevalence of malnutrition based on IAP classification was found to be 66% in the present study. Similar findings was found in NNMB study in Kerala and Orissa.[4,5]

In the present study higher number of children had Grade I malnutrition in 25-36 mth age group (26%) followed by 0-12 & 13-24 mth age group (24%). Similar observation of high prevalence among lower age groups were reported by studies in Chandigarh & Kolkata.[6]

The present study has found similar level of malnutrition with regard to MAC & BMI standards (45.2%& 40.1%) respectively

In the present study, it was found that 85% of children were fully immunized, 11% were partially immunized & 4% were not immunized at all. So the immunization coverage is increasing over the years which can be seen from the fact that the proportion of fully immunized children were uniformly showing a upward trend with decrease in the age group of children .Similar findings were found in a Tamilnadu study among refugee children.[7] The most commonly missed vaccine being measles.

**Table 1: Age and sex distribution**

| Age in months | Male | Female | Total |
|---|---|---|---|
| 0-12 | 47(43) | 63(57) | 110 |
| 13-24 | 52(40) | 78(60) | 130 |
| 25-36 | 74(55) | 61(45) | 135 |
| 37-48 | 37(53) | 33(47) | 70 |
| 49-60 | 30(54) | 25(46) | 55 |
| TOTAL | 240 | 260 | 500 |

Overall there were 48% male and 52% female children.

**Table 2: Socioeconomic Status**

| Socioeconomic Status | No of Subjects |
|---|---|
| CLASS -1 | 45 (9) |
| CLASS -2 | 30 (6) |
| CLASS -3 | 120(24) |
| CLASS -4 | 160(32) |
| CLASS -5 | 145(29) |
| TOTAL | 500 |

Majority of the families belong to class -4 group of socio economic status (32%) followed by class -5 (29%).

**Table 3: Weights of male children**

| Age Group Months | No of Children | Weight (Mean+SD) | Expected Weight ICMR |
|---|---|---|---|
| 0-12 | 47 | 07.2 ± 1.3 | 07.8 ± 1.0 |
| 13-24 | 52 | 10.6 ± 1.3 | 11.5 ± 1.2 |
| 25-36 | 74 | 12.5 ± 1.5 | 13.5 ± 1.3 |
| 37-48 | 37 | 14.9 ± 1.3 | 15.7 ± 1.9 |
| 48-60 | 30 | 17.3 ± 0.8 | 17.7 ± 2.2 |

The mean weights of male children were uniformly lower than the ICMR standards in all age group

**Table 4: Weight of female children**

| Age Group Months | No of Children | Weight Mean± SD | Expected Weight ICMR |
|---|---|---|---|
| 0-12 | 63 | 06.8 ± 1.0 | 07.2 ± 0.9 |
| 13-24 | 78 | 10.2 ± 1.1 | 10.8 ± 0.2 |
| 25-36 | 61 | 11.9 ± 1.4 | 13.0 ± 1.7 |
| 37-48 | 33 | 14.5 ± 1.1 | 15.1 ± 2.1 |
| 49-60 | 25 | 16.3 ± 0.8 | 16.8 ± 2.6 |

The mean weight of female children were uniformly lower than the ICMR standards in all age groups

**Table 5: MAC value of male/female children (Mean ± SD)**

| Age group | No. of male children | MAC value | No. of female children | MAC value |
|---|---|---|---|---|
| 13-24 | 52 | 13.3 ± 0.8 | 78 | 12.9 ± 0.8 |
| 25-36 | 74 | 13.4 ± 0.8 | 61 | 13.0 ± 0.7 |
| 37-48 | 37 | 13.8 ± 0.7 | 33 | 13.5 ± 0.8 |
| 49-60 | 30 | 14.2 ± 0.7 | 25 | 13.9 ± 0.7 |

The mean MAC values of both male and female children were less than normal among all age group children except among 48-59 months age group

**Table 6: Nutritional status based on mac standards of age**

| Age in months | Normal > 13.5cm | 12.5-13.5cm Mild/ moderate Undernutrition | < 12.5cm Severe undernutrition | Total |
|---|---|---|---|---|
| 13-24 | 49(23.44) | 59(42.14) | 22(53.6) | 130 |
| 25-36 | 61(29.18) | 55(39.28) | 19(46.3) | 135 |
| 37-48 | 64(30.62) | 06(4.28) | 0(0) | 70 |
| 49-60 | 35(16.74) | 20(14.28) | 0(0) | 55 |
| TOTAL | 209(100) | 140(100) | 41(100) | 390 |

$X^2$=66.2 df=3 p=0.000

The above table shows that by MAC standards majority of the children with mild to moderate malnutrition & severe malnutrition belong to 13-24 mths age group (42.14%) ,(53.6%) respectively followed by 25-36 mth age group (39.28%) (46.3%).This difference was found to be highly significant.

**Table 7: Details of immunization (n=390)**

| Parameter | No of subjects(%) |
|---|---|
| 1) Immunization | |
| a) Fully immunized | 332(85) |
| b) Partially immunized | 42(11) |
| c) Not immunized | 16(04) |
| 2) Immunization card available | |
| a) yes | 333 (85) |
| b) no | 57(15) |
| c) total | 390 |
| 3) Vitamin a supplementation (n=390) | |
| a)yes | 305(78) |
| b)no | 85(22) |
| c)total | 390 |

Table 7 shows that 85% children were fully immunized immunization card was available in 85% instances & 78% children received vit A supplementation

**Table 8: Nutritional status based on IAP**

| Age in months | Normal | Gr.I | Gr.II | Gr.III | Gr.IV | Total |
|---|---|---|---|---|---|---|
| 0-12 | 34(20) | 26(22) | 27(28) | 3(13) | 10(9) | 110 |
| 13-24 | 40(24) | 31(26) | 24(25) | 19(29) | 16(31) | 130 |
| 25-36 | 41(25) | 35(30) | 26(27) | 21(32) | 12(24) | 135 |
| 37-48 | 26(15) | 14(12) | 12(12) | 10(15) | 8(15) | 70 |
| 49-60 | 27(16) | 12(10) | 8(8) | 3(4) | 5(10) | 55 |
| TOTAL | 168(100) | 118(100) | 97(100) | 66(100) | 51(100) | 500(100) |

$X^2$=12.9 p=0.678

Higher proportion of all the Grades of malnutrition was found in 25-36 mths age group (Grade 1= 30% GradeII = 27% Grade IV =24%) followed by 13-24 mths age group (Grade 1=26%, Grade II =25%,Grade III=29% & Grade IV=31%).the differences between the age group & malnutrition was not found to be statistically significant..

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